



**INFORMATION FOR USE IN INTEGRATING ENVIRONMENTAL MANAGEMENT
SYSTEMS (EMS) INTO INTEGRATED SAFETY MANAGEMENT SYSTEMS (ISMS)**

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PREFACE

This document is being provided for information purposes only. It is being used to develop DOE G 450.1-1, *Implementation Guide For Use With DOE Order 450.1: Environmental Protection Program*. While the Guide is in final preparation prior to issuance into the REVCOM system, the information herein is being made available to those planning to, or in the process of, integrating an EMS into their ISMS. Please note that this document begins with section 5. Sections 1-4 contain boilerplate language that will be added to the document when it is issued in the REVCOM system. If you have questions or comments, please contact Larry Stirling (e:mail: <John.Stirling@eh.doe.gov>; telephone: (202)586-2417).

5. BACKGROUND

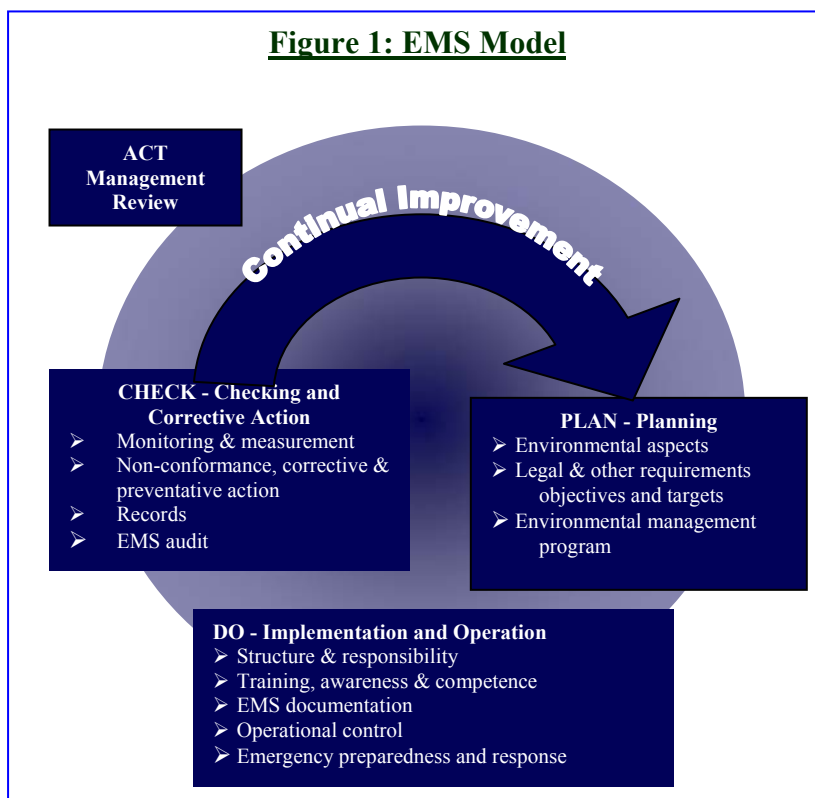
In April 2000, Executive Order (E.O.) 13148, *Greening the Government through Leadership in Environmental Management* was issued, requiring Federal Agencies to implement an EMS at all appropriate facilities by December 31, 2005. Responsive to E.O. 13148, DOE issued DOE O 450.1, *Environmental Protection Program*, which requires DOE elements to establish an EMS that is integrated into the site's ISMS.

5.1 Integrated Safety Management Systems

An ISMS represents DOE's overall umbrella framework for managing environment, safety and health. It was developed in response to Recommendations 95-2 and 98-1 of the Defense Nuclear Facility Safety Board, and was implemented at virtually all DOE sites by October 2000. The framework for ISMS is provided in DOE P 450.4, *Safety Management System Policy*, and guidance is provided in DOE G 450.4, *Integrated Safety Management System Guide*. In addition, ISMS is incorporated in DOE contracts through several Department of Energy Acquisition Regulations (DEAR) clauses. Within ISMS, the term "safety" is defined to encompass environment, safety, and health, including pollution prevention.

5.2 Environmental Management Systems

An EMS is a systematic and structured approach for addressing the environmental consequences of an organization's activities, products and services. DOE O 450.1 defines an EMS as "a continuous cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental missions and goals." Although several recognized EMS frameworks exist, most are based on the Internal Organization for Standardization (ISO) 14001 EMS standard. As a result, ISO 14001 is the framework upon which organizations most frequently choose to base their EMS, and, this is proving to be the case with U.S. Federal facilities. However, DOE O 450.1 does not prescribe the type of EMS framework that DOE elements must use. The basic ISO 14001 EMS model (see Figure 1) consists of the following four phases:



Phase I: Planning

The organization identifies how its operations interact with the environment and develops objectives and programs to manage these interactions/environmental aspects.

Phase II: Implementation and Operation

The organization implements programs to manage environmental interactions/aspects, as well as other procedures for general system administration.

Phase III: Checking and Corrective Action

The organization assesses the effectiveness of the programs it established to manage environmental interactions/aspects, in addition to general system operational effectiveness.

Phase IV: Management Review

The organization determines what changes to the EMS are necessary based on a performance assessment of the system's effectiveness (Phase III).

Phase IV may indicate that adjustments to programs, objectives and procedures are necessary. Output from this phase is fed back into Phase I, Planning, to make necessary changes and additions designed to bring the EMS to the desired level of effectiveness. This system feedback propels the continual improvement of the EMS.

The EMS continually moves through this cycle, fine-tuning its management of those areas of the organization's operations that interacts with the environment. This continual improvement cycle is a core tenet of the EMS that allows the system to adapt to the dynamic nature of the organization's operations.

Attachment 3 includes a list of the EMS elements required by DOE O 450.1.

Implementing an EMS brings a number of benefits to DOE sites. It will enable sites to cost-effectively protect the environment while executing their primary organizational missions. The inherent flexibility provided by these EMS elements allow users to implement an EMS at facilities of varying size, complexity, and missions, whether they be offices, laboratories, facilities, programs or agencies. Moreover, the EMS provides consistency and reliability in the management, assessment, and continuous improvement of environmental programs and controls. Finally, in contrast to crisis management, an EMS approach incorporates top management involvement, employee participation and other mechanisms that shift the culture of the organization towards the establishment of the environmental ethic that results in the continual improvement of environment, safety, and health performance.

5.3 ISMS/EMS

DOE O 450.1 requires DOE elements to ensure that site ISMSs include an EMS which meets several listed requirements. In those instances where ISMS is not applicable, DOE elements must ensure the implementation of an EMS. The integration of an EMS into an ISMS (hereinafter referred to as ISMS/EMS) provides a unified strategy for the management of resources, the control and attenuation of risks; and the establishment and achievement of the organization's environment, safety and health goals. The ISMS/EMS should be viewed as an enhancement of ISMS that adds those EMS elements not previously included in the ISMS. For

example, elements dealing with document control and records management have already been integrated into the ISMS and need not be replicated. The elements dealing with the identification of significant environmental aspects on the other hand may need to be added to the ISMS. Ultimately, the ISMS/EMS is intended to fully address the environment, safety, and health risks at DOE sites.

5.4 ISMS/EMS at Closure Sites

Several sites within the DOE complex are designated as closure sites, i.e., sites that have ceased operations and have identified near term closure activities and schedules. Most of the sites are conducting clean up and closure activities under the regulatory requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or other legal agreements with the Environmental Protection Agency (EPA) and/or state environmental agencies.

A site conducting near term closure activities may have most of the elements of the ISMS/EMS available or completed. For example, identification of significant environmental aspects and impacts may have been identified in the Remedial Investigation/Feasibility Study (RI/FS) process under CERCLA. Environmental Impact Statements conducted pursuant to the National Environmental Policy Act (NEPA) may also yield important information.

Sites in the near term closure phase should consider how well environment was integrated in their existing ISMS and use a graded approach to supplement their existing ISMS to meet the requirements of DOE O 450.1.

6. ENVIRONMENTAL MANAGEMENT SYSTEMS AND INTEGRATED SAFETY MANAGEMENT SYSTEMS

ISMS and EMS both strive for continual improvement, through a **plan-do-check-act** cycle. This cycle calls for defining the scope and purpose of the system, followed by a planning (**plan**) step to develop programs and procedures that must then be implemented (**do**). Once implemented, programs must be assessed (**check**) and any problems corrected (**act**) to improve the effectiveness of the management system, and to achieve improved environment, safety and health performance.

An EMS should consist of the following elements:

- Environmental Policy Statement
- Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review

Under ISMS, the term "safety" also encompasses health and environment (DOE Policy 450.4). Therefore, the guiding principles and core functions in ISMS are as applicable to the protection of the environment and protection of employee health, as they are to safety. The ISMS Guiding Principles and Core Functions are:

Guiding Principles

- Line management responsibility for environment, safety and health
- Clear roles and responsibilities
- Competence commensurate with responsibilities
- Balanced priorities
- Identification of environment, safety and health standards and requirements
- Hazard controls tailored to work being performed
- Operations authorization

Core Functions

- Define scope of work
- Analyze hazards
- Develop and implement hazard controls
- Perform work within controls
- Provide feedback and continuous improvement

This section provides a description of the principal elements of EMS and ISMS, and how these systems are similar. Figure 2 depicts how EMS and ISMS relate to each other. Figure 3 provides a detailed comparison of ISMS and EMS.

Figure 2. Overlap of ISMS Core Functions and EMS



6.1 Parallels Between EMS and ISMS

6.1.1 ES&H Policy statement

An environmental policy statement addresses several of the core management system themes, such as:

- Showing clear *management commitment* is a critical element of nearly all recognized EMSs, and essential in practice for an effective EMS. A policy statement offers a clear management commitment to the system for employees, contractors, suppliers, regulators, and the general public.
- The policy statement can be the core framework for the entire EMS. It sets out the broad principles such as *regulatory compliance, pollution prevention, and continual improvement*; it describes the approaches by which principles will be achieved and *communicated* to interested parties.
- Although organizations usually measure their EMS performance by assessing progress

toward reducing identified environmental risks, it is the environmental policy which usually provides the ultimate benchmark of the system's performance. In a periodic management review, the ultimate question is whether the system is achieving the principles and spirit of the policy.

The core functions and guiding principles of ISMS do not address the development of a policy statement. However, it is not inconsistent with the principles of ISMS to develop an ES&H policy statement. As part of the integration of EMS into ISMS, top management should issue a policy statement for a site or facility addressing environment, safety and health. Further guidance on what a policy statement should contain and how it may be developed is provided in section 7.5 below.

6.1.2 Planning

Section 4.a. (1) of DOE O 450.1 requires that DOE site ISMSs include an EMS that provides for systematic planning, integrated execution, and evaluation of programs for public health and environmental protection, pollution prevention (P2), and compliance with applicable environmental protection requirements. The planning function of EMS can be addressed in the first three core functions of ISMS: *define the scope of work*, *analyze the hazards*, and *develop and implement hazard controls*.

Part of the planning process under section 4.a.(3) of DOE O 450.1 is the identification of measurable environmental goals, objectives, and targets. This requirement parallels the process of developing and implementing hazard controls under ISMS where certain hazards (or impacts) are identified for special focus and management in order to achieve continual improvement. These hazards and impacts are monitored to establish whether objectives and targets are being achieved as planned.

6.1.3 Implementation and Operation

In an EMS, implementation and operation includes developing and maintaining programs and procedures, training, operational controls, and other elements.

This EMS element is addressed in ISMS core functions three and four: *develop and implement hazard controls*, and *perform work within controls*. Training is also addressed in ISMS guiding principle three: *competence commensurate with responsibilities*. The EMS gap analysis will determine the extent to which existing ISMS elements satisfy the requirements of DOE O 450.1 or whether they will need additions or amendments (see section 7.3 for a discussion on conducting a gap analysis).

6.1.4 Checking and Corrective Action

In an EMS, checking and corrective action includes maintaining procedures to monitor and measure the characteristics and progress of the EMS on a regular basis.

This element is addressed in the fifth ISMS core function, *provide feedback and continuous improvement*. The ISMS system description (DEAR 970.5223-1) requires the contractor to

provide feedback on the adequacy of operational controls, on continuing to improve ES&H management, and on measuring system effectiveness. Again, the gap analysis will determine whether any additional provisions need to be made to the existing feedback and corrective action process.

6.1.5 Management Review

An EMS management review is a periodic assessment (at a pre-determined frequency) by top management of how well the management system is functioning, and whether the established environmental goals, objectives and targets are being achieved.

This EMS element is covered in the fifth ISMS core function: *provide feedback and continuous improvement*. The adequacy, suitability and effectiveness of the management system processes should be reviewed for opportunities to improve the system's effectiveness. DEAR clause 970.5223-1 requires an annual review of the ISMS by the contractor and by DOE; this review should assess the adequacy, suitability and effectiveness of the ISMS/EMS. The gap analysis will ascertain whether other provisions for this element are needed.

Figure 3. Major parallels between ISMS and EMS

	Integrated Safety Management System	Environmental Management System
		➤ Policy
PLAN	Analyze Hazards	Planning
	<ul style="list-style-type: none"> ➤ Identification of Safety Hazards and Requirements <ul style="list-style-type: none"> ▪ Analyze Hazards ➤ Safety Standards and Requirements ➤ Balanced Priorities ➤ Line Management Responsibility ➤ Clear Roles and Responsibilities 	<ul style="list-style-type: none"> ➤ Environmental Aspects <ul style="list-style-type: none"> ▪ Determine Significant Aspects ➤ Legal and other Requirements ➤ Measurable Environmental Goals, Objectives and Targets ➤ Environmental Management Programs
DO	Develop & Implement Hazard Controls	Implementation & Operation
	<ul style="list-style-type: none"> ➤ Hazard Controls Tailored to Work ➤ Perform Work Within Controls ➤ Clear Roles and Responsibilities ➤ Competence Commensurate with Responsibilities 	<ul style="list-style-type: none"> ➤ Structure and Responsibility ➤ Training, Awareness and Competence ➤ Communication ➤ Document EMS ➤ Document Control ➤ Operational Control ➤ Emergency Preparedness and Response
CHECK	Provide Feedback & Continuous Improvement	Checking & Corrective Action
	<ul style="list-style-type: none"> ➤ Provide Feedback on Adequacy of Controls ➤ Continuous Improvement in Defining and Planning Work 	<ul style="list-style-type: none"> ➤ Monitoring and Measurement ➤ Nonconformance Corr./Prev. Action ➤ Records ➤ EMS Audit ➤ Management Review ➤ Continuous Improvement
ACT	Annual ISMS Review	Management Review
	➤ Continuous Improvement	➤ Continuous Improvement

7. PREPARING TO INTEGRATE EMS INTO ISMS

Integrating EMS elements into ISMS will lead organizations to follow much the same process they would if implementing a freestanding EMS. Section 9 summarizes the ten integration steps.

There are some important preparatory tasks that an organization should carry out initially to facilitate the ten steps to full integration, including:

Preparatory tasks

Task 1 - Selecting the ISMS/EMS team leader

Task 2 - Establishing the ISMS/EMS team

Task 3 - Conducting the ISMS/EMS Gap Analysis

Task 4 - Defining the Scope of the ISMS/EMS

Task 5 - Writing the ES&H policy statement

These tasks can have a substantial impact on the efficiency of implementation and the value provided by the ISMS/EMS. Therefore, it is critical that they be carefully considered and completed.

7.1 Task 1—Selecting the ISMS/EMS Team Leader

DOE Operations/Field/Site Office Managers and cognizant contractor management should select the team leader for their organization or site. These managers should also choose the remainder of the ISMS/EMS integration team.

The team leader should be selected for his or her knowledge of site operations, EMS, ISMS, and existing ES&H controls. He or she should preferably be someone with leadership skills necessary to promote an initiative that requires cooperation, coordination, and change management across the many entities, functions and interests at a DOE site. Some of the characteristics of a suitable ISMS/EMS team leader include:

- **Employee trust**
The team leader should be someone the employees trust, relate to, and feel comfortable with.
- **Management trust**
The team leader should be someone that top management trusts to make wise decisions and wise, pragmatic use of resources including employee time.
- **Energy and creativity**
The team leader should be energetic and creative in leading the team and ultimately the entire organization in investigating the environmental consequences of the organization's activities, products and services, and implementing procedures and programs as part of a system that establishes the environmental ethic and works continuously to address the environmental impacts of the organization.

- **Confidence and organizational skills**

The team leader should be someone who has confidence and organizational skills to lead and direct the ISMS/EMS team.

7.2 Task 2—Establishing an ISMS/EMS Team

Top management will need to establish site ISMS/EMS teams drawn from a cross-section of internal functions, to take on the responsibility for developing the ISMS/EMS. The team size and makeup will vary by individual sites and should include those individuals that have knowledge of site operations, those with extensive understanding of EMS and ISMS, and those with experience of environmental programs and issues. The team can include representatives from the appropriate program offices, environmental, health and safety, quality, personnel, legal, documents and records management, communications, facilities, and design functions among others.

7.2.1 ISMS/EMS Team Training

Once the team is established, team members should review available information on the elements of EMS, ISMS, and the requirements and approaches for integration. Many commercial, as well as government training organizations offer training on EMSs.

7.3 Task 3—Conducting the ISMS/EMS Gap Analysis

As a first step, the ISMS/EMS team should conduct a gap analysis to establish the existing site EMS baseline. This is achieved by comparing the requirements set out in DOE O 450.1 against existing site management system descriptions, policies and procedures. The gap analysis will determine what EMS elements are already in place, and to what degree EMS requirements are addressed by existing ISMS procedures. For example, the gap analysis will determine whether there is a documented procedure for providing training, and whether programs and procedures are effectively integrated and operating as parts of a comprehensive, coordinated system. Having done this comparison, the ISMS/EMS team can determine which elements must be expanded, supplemented or established to fully conform to DOE O 450.1. (Note that this gap analysis does not identify the organization's environmental aspects; this is done later, in the early stages of implementation.) In general the gap analysis should:

- Assess whether existing programs, procedures and controls fully address the EMS elements required by DOE O 450.1.
- Identify any need for new or revised programs and procedures
- Establish whether the significant environmental aspects (operational influences on the environment) of site/organization activities, products or services have been identified.
- Identify whether measurable goals, objectives and targets have been established to address the significant environmental aspects of the site's activities products and services

Attachment 1 provides an example of a gap analysis questionnaire that is based on ISO 14001 and which also includes requirements from DOE O 450.1. The gap analysis may include more detailed questions to assess the operational status of system components and other arrangements

for regulatory compliance or for control of environmental exposures. DOE sites have the option of conducting a gap analysis as part of their annual ISMS review.

7.4 Task 4—Defining the Scope of the ISMS/EMS

7.4.1 Organizational Scope

Organizational scope refers to the set of facilities or activities covered by an ISMS/EMS. DOE O 450.1 does not prescribe the organizational scope of an EMS that is integrated into a site's ISMS. An ISMS/EMS may include one or more geographic sites within one management organization. For example, Western Area Power Administration has implemented an EMS for its entire system across 25 states, the Strategic Petroleum Reserve's ISMS/EMS covers sites in Louisiana and Texas, and the Kansas City Plant's EMS covers one single large building. On the other hand, separate major contractors at Hanford each have a separate ISMS/EMS. The organizational scope of the ISMS/EMS should usually parallel the scope of the existing ISMS.

The ISMS/EMS should include all activities that occur within that scope, including DOE field offices, contractors (with appropriate flow-down to subcontractors), and other tenant organizations. The ISMS/EMS at the Savannah River Site includes the DOE field office, all DOE facilities on site, the Savannah River Ecology Laboratory, the U.S. Forest Service activities on site, and the General Services Administration activities on the site.

Implementation of an ISMS/EMS at a large site with multiple, semi-autonomous divisions may best be approached by taking advantage of the divisional structure on the site. This approach was successfully employed at Brookhaven National Laboratory. The ISMS/EMS was developed centrally for the entire laboratory and many of the functions of the ISMS/EMS, such as document control and records management were executed through a centralized, on-line management system. However, each division was given responsibility to analyze its own separate activities, products and services, to identify the environmental aspects that were present in those activities, products and services, to select those aspects that were significant, and importantly to define their environmental management programs (EMPs) and all the detail that go into them such as operational controls, objectives and targets, performance indicators, roles, authorities and responsibilities, and training needs. These divisional sub-systems were tested and approved individually (primarily through third-party audits) and were later integrated into a site-wide ISMS/EMS, although each division still retains responsibility for its own environmental aspects and the EMPs that address those aspects.

Where separate ISMS/EMS systems exist for different entities on one site, the ISMS/EMS documentation should clearly identify the organizational and geographic boundaries to indicate that which is included and that which is not included in the ISMS/EMS. The ISMS/EMS team should review this documentation to ensure that all site-wide issues and cumulative impacts are addressed and that no activities or impacts are overlooked.

A graded approach may be the best process to implement the EMS/ISMS at a closure site. For example, the Fernald Environmental Management Project (FEMP) shut down production activities in 1989. The clean up is being conducted under CERCLA, and in accordance with approved Records of Decision (RODs), workplans and legal agreements with EPA and the State

of Ohio. Completion of cleanup is scheduled for 2006. Much of the systematic approach of an EMS is realized through the CERCLA investigation, planning and stakeholder review, implementation and monitoring process.

The major elements of an ISMS/EMS are: planning, implementation and operation, checking and corrective action, and management review and are discussed in detail in Section 9 of this Guide. For example, identifying environmental aspects and impacts, which is part of your planning element, may have been identified during the RI/FS process. The site's objectives and targets, which are also part of the planning element, may have been determined through pathway analysis and establishment of clean up levels and programs/activities approved in RODs and workplans. Elements of implementation and operation and checking and corrective action would be part of the site's CERCLA clean up program. Closure sites may be further along in the implementation of many elements of an ISMS/EMS than many active operation sites. They have conducted extensive planning and analysis activities that can be incorporated into their ISMS/EMS.

7.4.2 Subject Matter Scope

The ISMS/EMS should address all of the subject matter areas covered in section 4.b.(1) of DOE O 450.1, (e.g. cultural resource protection, watershed management) unless they are not applicable to the site. If they are not applicable, a site is expected to make an affirmative declaration that certain subject matter areas are not applicable. The subject matter areas identified in DOE O 450.1 constitute the minimum scope of "environment" for the purposes of an ISMS/EMS. For example, if site activities have the potential to affect cultural resources, then cultural resources should be included within the policies, programs and procedures of the ISMS/EMS. Potential impacts to cultural resources should be identified, appropriate programs and controls should be established, and monitoring and feedback on the accomplishment of objectives and targets should be provided. If the site's operations do not affect any cultural resources, the ISMS/EMS should note that the issue was considered but found unnecessary to include. Additional guidance will be provided in the near future on subject areas covered by DOE O 450.1.

7.5 Task 5—Writing the Environment, Safety and Health (ES&H) Policy Statement

Each site implementing an ISMS/EMS should develop an ES&H Policy Statement. This policy statement should reflect the nature and scale of the organization's activities, products and services and embody the organization's commitment to:

- Compliance with laws and applicable requirements
- Pollution Prevention
- Continual improvement of the management system and of ES&H performance
- Integration of environmental accountability into decision making processes

The understanding gained in the training, in conducting the gap analysis, and in developing the ISMS/EMS scope will assist the ISMS/EMS team in its development of the ES&H Policy Statement. Sites may also base their ES&H Policy Statement on any existing ISMS policy

statements or other policy statements at the site. The site ES&H Policy Statement should express management's commitment to identifying and addressing potential environmental, safety and health risks from site activities. The site's ES&H Policy Statement should serve as a framework for setting and reviewing a facility's environmental goals, objectives and targets. The ISMS/EMS team should review and reference as appropriate, DOE policies, listed below and implemented through DOE Orders (particularly DOE O 450.1, *Environmental Protection Program*) to develop the site's ES&H Policy Statement.

- DOE Policy 450.1, *Environment, Safety and Health Policy for the Department of Energy Complex*
- DOE Policy 450.2A, *Identifying, Implementing and Complying with Environment, Safety and Health Requirements*
- DOE Policy 450.4, *Safety Management System Policy*
- DOE Policy 450.5, *Line Environment, Safety and Health Oversight*
- DOE Policy 450.6, *Secretarial Policy Statement: Environment, Safety and Health*
- DOE Policy 141.2, *Public Participation and Community Relations*

The following are examples of language that can be used in policy statements to address various environmental exposure areas applicable to DOE sites:

- **Regulatory Compliance**
We will identify and comply with all applicable environmental laws and regulations at each location where we conduct business.
- **Pollution Prevention**
We will seek, first, to cost effectively avoid the generation of pollution and waste from our processes and services, and, second, to manage remaining waste through safe and responsible methods and vendors. We will also seek to avoid the release of hazardous substances into the environment by using environmentally preferable products in our processes and services whenever cost-effectively feasible.
- **Conservation**
We will strive to diminish our consumption of natural resources through cost-effective reuse of materials and use of recycled-content materials and conservation of energy and water.
- **Emissions and Effluents**
We will work to reduce our emissions and effluents by employing cost-effective operational controls, by diligently monitoring operational indicators to determine when corrective actions are needed, and by implementing corrective and preventive actions whenever necessary.
- **Design for Environment**
We will develop or procure products that have been designed to prevent pollution and that are safe for their intended use, efficient in their use of energy, protective of the environment, and that can be recycled or disposed of safely.

- **Responsible Neighbor**

We will be an environmentally responsible neighbor in the communities where we operate and act quickly and responsibly to correct incidents or conditions that endanger health, safety, or the environment, report them to authorities promptly, and inform everyone who may be affected by them.

- **Cultural Resources**

We will be attentive in our operations and activities to avoid unnecessary harm to cultural resources (e.g., an action that threatens, disturbs, damages, or destroys historic properties, cultural landscapes, cultural items, archeological resources, Indian sacred sites, cemeteries)

- **Organizational Planning**

We will incorporate environmental considerations into our organizational planning processes.

- **Responsible Partnerships**

We will work with stakeholders to address mutual environmental concerns and will encourage suppliers, vendors, and contractors to comply with similar environmental protection goals.

- **Ecology, Habitats, Endangered Species**

We will be attentive in our operations and activities to avoid unnecessary harm to endangered species, natural habitats and ecologically sensitive areas.

- **Communication**

We will communicate this policy to all employees and make it available to the public and our stakeholders, and consider public input, and incorporate or otherwise respond to stakeholder views when making decisions. We will also alert potentially affected individuals and authorities of any environmental incident in a timely manner in order to empower participation at appropriate stages of the decision making process.

It may be appropriate for the Program Secretarial office, the head of a DOE field office, and the head of a DOE contractor organization to each issue a policy statement, with appropriate scope. Alternatively, the DOE field office and contractor can jointly issue a policy statement. Once senior management has endorsed the policy statement, it should be communicated to all staff and made available to the public. DOE sites should use existing mechanisms to communicate the policy statement to its staff and the public.

8. ISMS/EMS FRAMEWORKS

DOE O 450.1 does not require DOE elements to implement any specific EMS model or standard. The Order does include the EMS elements (see attachment 3) that are required to be included in an ISMS/EMS. DOE elements implementing the requirements of the Order may opt to use the ISO 14001 standard or any other model that meets the requirements of the Order. To ensure a high-level commitment to the establishment of the EMS portion of ISMS, Program Secretarial Officers, the Administrator for the National Nuclear Security Administration, and Administrators for the Power Administrations, in consultation with DOE Operations/Field/Site Office managers should make the decision regarding whether a DOE site's EMS will follow the ISO 14001 standard or another EMS framework. Regardless of which model is chosen, the EMS elements must still be compatible with, and integrated into, the site ISMS.

Section 3.a. (2) of DOE O 450.1 provides for those instances where requirements for ISMSs are not applicable. In those cases DOE elements must ensure the implementation of EMSs. These DOE sites have the choice of using one of the implementation frameworks discussed below, but do not have to integrate their EMS with ISMS.

8.1 Framework 1: Self-Declaration

A DOE site can implement the elements of an EMS, within the context of its existing ISMS, which meets all the requirements of DOE O 450.1. The site can then self-declare conformity of its ISMS/EMS to the requirements of the Order (see section 10.1 for details on self-declaration). When selecting framework 1 or 2, DOE sites should clearly define the elements of the EMS as part of their ISMS.

8.2 Framework 2: Third-Party Registration to ISO 14001

A DOE site can implement the elements of an ISO 14001 EMS, within the context of its existing ISMS, which meets all the requirements of DOE O 450.1. The site may then seek third-party registration (see section 10.1 for details on third-party registration). Several DOE sites have already chosen this course, although it is not required by DOE O 450.1.

9. SUMMARY OF INTEGRATED SAFETY MANAGEMENT SYSTEM/ENVIRONMENTAL MANAGEMENT SYSTEM INTEGRATION

DOE O 450.1 requires all DOE entities to ensure that their site ISMS includes the elements of an EMS. Specifically, section 4.a. of DOE O 450.1 requires that all DOE elements must ensure that a site's ISMS/EMS does the following:

- (1) Provides for the systematic planning, integrated execution, and evaluation of programs for:
 - Public health and environmental protection
 - Pollution prevention (P2)
 - Compliance with applicable requirements
- (2) Includes policies, procedures, and training to identify activities with significant environmental aspects, to manage, control, and mitigate the potential impacts of these activities, and to assess performance and implement corrective actions where needed.
- (3) Includes measurable environmental goals, objectives, and targets that are reviewed annually and updated when appropriate.

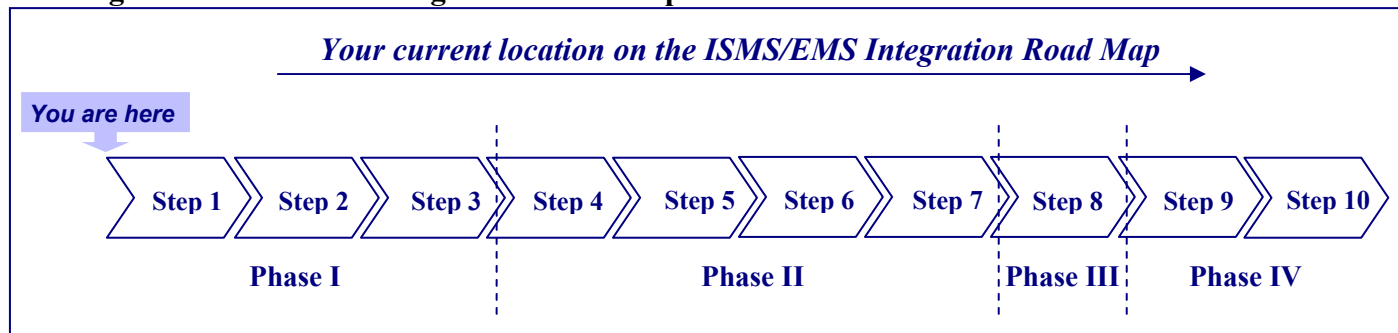
A complete list of all EMS elements required by the Order to be included in a site's ISMS/EMS are contained in attachment 3.

To comply with the requirements of DOE O 450.1, the ISMS/EMS team should progress through a typical EMS implementation schedule, integrating EMS elements into the existing ISMS where needed. The four major phases of this process are:

1. Planning
2. Implementation and Operation
3. Checking and Corrective Action
4. Management Review

Each of these four phases consists of steps that integrate EMS elements into a site's existing ISMS. This process should be carried out step-by-step for implementation to be efficient and for the ISMS/EMS to operate as expected. There are ten steps that comprise the four phases of implementation (see figure 5). This section of the guide provides a brief summary of the steps in each phase as an overview of the entire integration process. Detailed guidance on the steps in each phase will be issued in the near future. For definitions see Attachment 4.

Figure 5. ISMS/EMS Integration Road Map



9.1 Phase I--Planning

Step 1—Identifying Environmental Aspects

Identify how the activities, products, and services of the organization may interact with the environment. For example, some activities can cause ground water contamination as a result of spills; others may create habitats for flora and fauna. These potential interactions (e.g., spills, habitat creation) are environmental aspects (ground water contamination and increased diversity of flora and fauna are the impacts).

Step 2—Determining Significant Aspects

For each environmental aspect, determine the consequence of its occurrence and the likelihood that it will occur. Combined, these two characteristics describe the potential impact of an environmental aspect. Next, an organization should determine whether the environmental aspect is significant. Significant environmental aspects are those aspects that have or could have a significant impact on the environment, the organization, or to the organization's mission.

Step 3—Setting Measurable Environmental Goals, Objectives and Targets

Set measurable goals, objectives and targets which address all significant environmental aspects and achieve the commitments made in the ES&H policy (e.g., pollution prevention goals, such as reductions in waste generation and releases to the environment).

9.2 Phase II—Implementation and Operation

Step 4—ISMS/EMS Documentation Management

The ISMS system description should be modified to make reference to additional documents and procedures developed in order to ensure that the elements of an EMS are integrated into the site's ISMS.

Step 5—Developing or Revising Existing Environmental Management Programs (EMPs)

As needed, develop or revise existing programs to include plans for the achievement of measurable goals, objectives and targets. These programs should specify the resources (human and financial) designated for specific activities, controls, and procedures needed to achieve the goals, objectives and targets.

Step 6—Developing or Revising Existing Operational Controls

Operational controls can be either administrative or engineering controls and are used to control potential environmental impacts. For example, operational controls could be applied to transporting waste drums to reduce the opportunity for spills. Adherence to these controls will support the achievement of goals, objectives and targets.

Step 7—Developing or Revising Existing Procedures

In many cases, DOE sites will not need to develop new procedures, but can use existing ISMS procedures or revise them to include missing EMS elements. For example, a site may need to develop procedures on how to identify environmental aspects.

9.3 Phase III—Checking and Corrective Action

Step 8— Internal Audit Program

The site's existing ISMS audit program should be modified to include the assessment of all elements of the ISMS/EMS, including the level of implementation and operational effectiveness of procedures, programs, and controls, in addition to the level of progress made toward objectives and targets. Audits should identify non-conformity, root causes, trends, and corrective actions. Audits should also be consistent with DOE Policy 450.5, *Line Environmental, Safety and Health Oversight*.

9.4 Phase IV—Management Review Process

Step 9—Developing the Management Review Process

Develop a process whereby management can assess ISMS/EMS performance based on available evidence and make decisions that drive continual improvement of the system. Present management with findings and analysis that fully describes ISMS/EMS performance elements, such as the effectiveness of the ISMS/EMS, overall improvement of environmental performance, successful and unsuccessful programs, non-conformity with procedures and operational controls and the level of achievement of objectives and targets. This process should be integrated with the annual ISMS review.

Step 10 - Developing a Plan to Keep the ISMS/EMS Updated

Develop a plan including a schedule to review and update, as needed, all elements of the ISMS/EMS. In addition, develop approaches to maintaining the momentum of the ISMS/EMS including management involvement and employee participation and interest (See also DOE Guide 450.4, Chapter IV).

10. ASSESSING AND REPORTING IMPLEMENTATION OF THE MANAGEMENT SYSTEM REQUIREMENTS OF DOE ORDER 450.1

DOE O 450.1 requires Program Secretarial Officers, the Administrator for the National Nuclear Security Administration, and Administrators for the Power Administrations to ensure that by December 31, 2005, all sites under their purview have implemented the management system requirements of the Order (section 5.c.(1)). Managers of DOE Operations, Field, or Site Offices are required by the Order to report by December 31, 2005, to the Cognizant Secretarial Officer the status regarding whether the EMS requirements of DOE O 450.1 have been integrated into ISMSs by site contractors (section 5.d.(1)). This section provides guidance regarding how a DOE site can demonstrate that it has an ISMS/EMS that meets the requirements of the Order.

10.1 Self-Declaration

As discussed in Section 8, DOE sites may choose between two frameworks for declaring conformity to the Order. Under framework 1, DOE sites can self-declare conformity with the requirements of DOE O 450.1 and under framework 2, DOE sites obtain third-party registration to ISO 14001.

Self-declaration means that a site has determined that it fully conforms to the requirements of DOE O 450.1 and publicly asserts that it conforms to the Order. To be credible, the self-declaration process should be based upon a conclusion of conformity reached after the organization has completed an internal environmental management system evaluation, and determined that its ISMS/EMS conforms to the requirements of the Order.

DOE sites should use a self-declaration procedure which provides for effective and objective assessment of the ISMS/EMS in a manner that not only ensures the system meets the requirements of DOE O 450.1, but that is also designed for ongoing evaluation and continual improvement. The process must also be transparent and provide credibility to interested parties. The evaluation should be thorough and systematic.

The Office of Environment, Safety and Health (EH) has developed a self-declaration procedure that DOE sites may use (attachment 2). This procedure was developed pursuant to the "Agency Self-Declaration Protocols for Appropriate Federal Facilities" developed by the Executive Order 13148, Greening the Government through Leadership in Environmental Management Interagency Working Group. This procedure should be used in conjunction with attachment 3, *Elements of an ISMS/EMS-DOE Order 450.1*, which contains the EMS elements required by DOE Order 450.1 to be included in a site's ISMS/EMS. Attachment 3 can also be used to develop an evaluation checklist or lines of inquiry that can be used during the evaluation.

Alternatively, sites may use other self-declaration procedures that credibly establish and document that they have an EMS that conforms to the requirements of DOE O 450.1. For example, sites may use existing review/evaluation/audit processes already established under ISMS. However, sites using this option must comply with the reporting requirements of sections 5(d)(1) of DOE O 450.1 and should prepare a report letter pursuant to section 10.3.1 of this guide. Sites using this option should also prepare a self-declaration statement that can be publicly issued on the site web site (see page 16 of attachment 2 for an sample statement).

10.2 Third-Party Registration of ISMS/EMS

Third-party registration of a site's ISMS/EMS is an option that DOE sites may choose. A DOE entity may choose to include several related sites under one registration. **Third-party registration is not a requirement of DOE O 450.1.** An ISMS/EMS that conforms to all the requirements of the ISO 14001 Standard may be registered by an independent third-party registrar. However, this ISMS/EMS must still meet all the requirements of the Order.

Registration is based on an audit by an independent, third party registrar, and lasts for three years. During this period, the registrar will conduct periodic verification audits. Renewal after three years is based on the assessment of the registrar that may or may not include another full audit.

10.3 DOE O 450.1 Report Letter Requirement

This section outlines the information that should be included in the **Report Letter** from the Operations, Field, or Site Office Manager to the Cognizant Secretarial Officer by December 31, 2005 (pursuant to section 5.d. (1)) reporting whether the EMS requirements of DOE O 450.1 have been implemented and integrated into the site's ISMS.

10.3.1 Report Letter—Framework 1

If the site ISMS/EMS is not third-party registered, the report letter should include an affirmation by the Operations/Site/Field Office Manager that the site has implemented an ISMS/EMS, which meets the requirements of DOE O 450.1 and that the following has been reviewed:

- a. ES& H (or environmental) policy statement
- b. Current approved ISMS system description (including ISMS/EMS)
- c. Current list of significant aspects
- d. Current list of measurable environmental goals, objectives, and targets

Supporting documentation must be available on request by the PSO or EH or the Office of Independent Oversight and Performance Assurance, but need not be attached to the letter.

10.3.2 Report Letter—Framework 2

If the site ISMS/EMS is third-party registered to the ISO 14001 Standard, the report letter from the Operations/Site/Field Office Manager should include the following:

1. The name and address of the third-party registrar, the date of registration audit, and the date of the most recent verification audit.
2. An affirmation by the Operations/Site/Field Office Manager that the site has implemented an ISMS/EMS, which meets the requirements of DOE O 450.1.

ATTACHMENTS

ATTACHMENT 1

GAP ANALYSIS WORKSHEET

ATTACHMENT 1

GAP ANALYSIS WORKSHEET

Instructions: The left column of this worksheet includes all the requirements needed to conform to the elements of an EMS and DOE Order 450.1. The right column has been left blank so that a DOE site can describe how each EMS element is covered under the site's ISMS or other relevant management system (including an existing EMS). All identified gaps should be identified in the right column.

EMS Elements (Based on ISO 14001 and DOE Order 450.1)	Gaps Remaining after Comparison to ISMS
<p>Environmental Policy</p> <p>An environmental policy has been defined by top management that includes the following:</p> <ul style="list-style-type: none"> • It is appropriate for the nature, scale, and environmental impacts of the site's activities, products, and services. • It includes a commitment to continual improvement in the prevention of pollution. • It includes a commitment to comply with relevant environmental legislation, regulations, and requirements. • It includes a commitment to promote long-term stewardship of the site's natural and cultural resources. • It provides a framework for setting and reviewing environmental objectives and targets. • It is documented, implemented, and maintained. • It has been communicated to all employees. • It is available to the public. 	
<p>Planning</p> <p>The EMS does the following:</p> <ul style="list-style-type: none"> ▪ Provides for the systematic planning of programs for pollution prevention. ▪ Provides for the systematic planning of programs for public health and environmental protection. 	
<p>Environmental Aspects</p> <ul style="list-style-type: none"> • A procedure exists to identify environmental aspects and determine which have significant impacts on the environment. • Procedure includes consideration of existing NEPA documentation to identify impacts. • Procedure promotes use of a comprehensive analysis that (1) accounts for all sources of release and contamination, (2) assesses composite impacts (e.g. impacts to all media from radiation) of operations and activities and their implications for near- and long-term environmental management of the site with regard to legal requirements and environmental performance 	

<p>objectives; (3) integrates with other relevant site-wide natural and cultural resource processes (e.g., existing land use planning processes) to ensure consistent management criteria are used throughout the site.</p> <ul style="list-style-type: none"> • Significant aspects are considered when setting environmental objectives. • This information is kept up-to-date. 	
<p>Legal and Other Requirements</p> <ul style="list-style-type: none"> • A procedure exists to identify and have access to legal and other requirements pertaining to environmental aspects. • EMS includes systematic planning of programs for compliance with applicable requirements. • Consider the following (if applicable) when identifying legal requirements and other requirements: requirements relating to Clean Air Act General Conformity; implementation of a watershed approach for surface water protection; implementation of a site-wide approach for ground water protection; protection of natural resources, including biota; protection of site resources from wildland and operational fires; protection of cultural resources; and reduction and elimination of waste generation, the release of pollutants to the environment and use of Class I ODS through source, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services. 	
<p>Objectives and Targets</p> <ul style="list-style-type: none"> • Objectives and targets have been established at each relevant function and level. • Establish measurable goals, objectives and targets. • Develop site-specific goals that contribute to the accomplishment of the DOE pollution prevention and energy efficiency goals. • Contractor ES&H performance objectives, performance measures, and commitments include appropriate environmental elements based on the environmental risks, impacts of activities at the site and established Departmental pollution prevention/energy efficiency goals. • Legal and other requirements were considered in establishing them. • The following (if applicable) were also considered in establishing them: requirements relating to Clean Air Act General Conformity; implementation of a watershed approach for surface water protection; implementation of a site-wide approach for ground water protection; protection of natural resources, including biota; protection of site resources from wildland and operational fires; protection of cultural resources; and reduction and elimination of waste generation, the release of pollutants to the environment 	

<p>and use of Class I ODS through source, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services.</p> <ul style="list-style-type: none"> • Significant environmental impacts were considered in establishing them. • Technological options were considered in establishing them. • Financial, operational, and business requirements were considered in establishing them. • The views of interested parties were considered in establishing them. • They are consistent with the environmental policy. • Site-specific goals that contribute to the accomplishment of DOE pollution prevention and energy efficiency goals were developed. 	
<p>Environmental Management Program An environmental management program for achieving objectives and targets has been established and includes:</p> <ul style="list-style-type: none"> • Designation of responsibility for achieving objectives and targets at each relevant function and level of the company. • The means and time frame for accomplishment. • The program applies to new developments, new or modified activities, products, and services. • Includes policies and procedures to manage, control, and mitigate the potential impacts of site activities with significant impacts. • Includes (if applicable) the following: requirements relating to Clean Air Act General Conformity; implementation of a watershed approach for surface water protection; implementation of a site-wide approach for ground water protection; protection of natural resources, including biota; protection of site resources from wildland and operational fires; protection of cultural resources; and reduction and elimination of waste generation, the release of pollutants to the environment and use of Class I ODS through source, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services. • Includes development and implementation of cost-effective pollution prevention programs that use life-cycle assessment concepts and practices in determining program return-on investment. • Promotes long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and post-closure life cycle. 	
<p>Implementation and Operation</p> <ul style="list-style-type: none"> • Provides for the integrated execution of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements. 	

<p>Structure and Responsibility</p> <ul style="list-style-type: none"> • Roles, responsibilities, and authorities are defined, documented, and communicated. • Resources are provided that are essential to the implementation and operation of the environmental management system. • A specific management representative (one or more) has been appointed by top management with defined roles, responsibility, and authority for establishing, implementing and maintaining an EMS; and reporting on the performance of the EMS to top management. 	
<p>Training, Awareness, and Competence</p> <ul style="list-style-type: none"> • Training needs are identified and all personnel whose work may create a significant impact upon the environment have received appropriate training. • Procedures are established and maintained to make appropriate employees aware. • Personnel performing tasks that can cause significant environmental impacts are competent. • Includes training to identify activities with significant environmental impacts. • Includes training to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts. • Includes training to assess performance and implement corrective actions where needed. 	
<p>Communication</p> <p>The site has established and maintains procedures for—</p> <ul style="list-style-type: none"> • Internal communications among levels and functions. • Receiving, documenting and responding to relevant communication from external interested parties. • Considered processes for external communication on its significant environmental aspects and recorded its decision. • Obtain as appropriate, community advice relevant to aspects of “Greening the Government” Executive Orders, through new or existing outreach programs. 	
<p>EMS Documentation</p> <ul style="list-style-type: none"> • Information describing the core elements of the EMS and their interaction has been established and maintained. • Information providing directions to related documentation has been established and maintained. • Update approved ISMS descriptions to include EMS requirements. 	
<p>Document Control</p>	

<p>A procedure has been established and maintained for controlling documents to ensure that</p> <ul style="list-style-type: none"> • They can be located. • They are periodically reviewed, revised, and approved by authorized personnel. • Current versions are available at all appropriate locations. • Obsolete documents are promptly removed. • Obsolete documents retained for preservation are identified as such. • Documents are legible, readily identifiable, maintained, retained, and includes most recent revision date. • Procedures exist and are maintained for creation and modification of documents. 	
<p>Operational Control</p> <ul style="list-style-type: none"> • Includes procedures to manage, control, and mitigate the potential impacts of site activities with significant impacts. 	
<p>Emergency Preparedness and Response</p> <ul style="list-style-type: none"> • There are procedures for identifying the potential for and response to accidents and emergency situations. • There are procedures for preventing and mitigating the environmental impacts that may be associated with emergencies. • These are reviewed and revised as necessary. • Procedures are periodically tested where practicable. 	
<p>Checking and Corrective Action</p> <ul style="list-style-type: none"> • Provides for evaluation of programs for compliance with applicable requirements. • Provides for evaluation of programs for public health and environmental protection. • Provides for evaluation of programs for pollution prevention. • Implementation is assessed as a component of the implementation of DOE P 450.5, <i>Line Environment, Safety and Health Oversight</i> 	
<p>Monitoring and Measurement</p> <ul style="list-style-type: none"> • Procedures exist and are documented to regularly monitor and measure the key characteristics of operations having a significant impact on the environment. • Includes recording information to track performance, relevant operations controls, and conformity with objectives and targets. • Monitoring equipment is calibrated and maintained and records of the process retained. • A procedure exists for periodically evaluating compliance with legislation and regulations. • Includes policies, procedures to assess performance 	

<ul style="list-style-type: none"> • Contractor ES&H self-assessment programs within the framework of DOE P 450.5 are established and continue to be effective. • Ensures the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including, as appropriate, preoperational characterization and assessment and effluent and surveillance monitoring. • Provides for the conduct of environmental monitoring, as appropriate, to support the site's ISMS, to detect, characterize, and respond to releases from DOE activities. • Provides for the conduct of environmental monitoring, as appropriate, to assess impacts. • Provides for the conduct of environmental monitoring, as appropriate, to estimate dispersal patterns in the environment . • Provides for the conduct of environmental monitoring, as appropriate, to characterize the pathways of exposure to members of the public; and to characterize the exposures and doses to individuals, and to the population. • Provides for the conduct of environmental monitoring, as appropriate, to evaluate the potential impacts to the biota in the vicinity of the DOE activity. • Provides for the implementation of the analytical work supporting environmental monitoring using a consistent system for collecting, assessing, and documenting environmental data of known and documented quality. • Provides for the implementation of the analytical work supporting environmental monitoring using a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work . • Provides for the implementation of the analytical work supporting environmental monitoring using an integrated sampling approach to avoid duplicative data collection. 	
<p>Nonconformity and Corrective/Preventive Action</p> <ul style="list-style-type: none"> • Procedures exist and are maintained for defining responsibility and authority for handling and investigating nonconformity and taking appropriate action. • Corrective or preventive actions are appropriate. 	

<ul style="list-style-type: none"> Changes in procedures resulting from corrective and preventive action are documented. 	
<p>Record</p> <ul style="list-style-type: none"> Procedures are established and maintained for the identification, maintenance, and disposition of environmental records. These include training and audit results. Records are legible, identifiable, and traceable to the activity, product, or service involved. Records are easily retrievable and protected from damage, deterioration, or loss. Retention times are established and recorded. Records demonstrate conformity to the standard. 	
<p>EMS Audit</p> <ul style="list-style-type: none"> A program and procedure for periodic EMS audits is established and maintained. The audits determine whether the EMS conforms to the ISO 14001 standard and DOE O 450.1. Whether it has been properly implemented and maintained. The program provides information on the results of audits to management. Procedures cover the audit scope, frequency, and methods, and responsibilities and requirements for conducting audits and reporting results. Provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements. Contractor ES&H self-assessment programs within the framework of DOE P 450.5 are established and continue to be effective. 	
<p>Management Review</p> <ul style="list-style-type: none"> Top management regularly reviews the EMS to ensure its suitability, adequacy, and effectiveness. The review is documented. Information necessary for management to perform this is collected. The review shall consider the need for changes to policy, objectives, and other elements of the EMS resulting from audit results, changing conditions, and the commitment to continual improvement. Provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements. Includes policies, procedures to assess performance. The ISMS/EMS reviews annually, and updates (when appropriate) the site's measurable environmental goals, objectives, and targets. Implementation is assessed as a component of the 	

<p>implementation of DOE P 450.5, <i>Line Environment, Safety and Health Oversight</i>.</p> <ul style="list-style-type: none"> • Contractor ES&H performance objectives, performance measures, and commitments are reviewed through the annual ISM review process [established pursuant to DEAR 970.5223-1 (e)] 	
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Attachment 2

DOE ISMS/EMS SELF-DECLARATION PROCEDURE

ATTACHMENT 2

DOE ISMS/EMS SELF-DECLARATION PROCEDURE

Introduction and Purpose

The Executive Order 13148, Greening the Government through Leadership in Environmental Management Working Group (hereinafter Working Group) developed self-declaration protocols entitled, "Agency Self-Declaration Protocols for Appropriate Federal Facilities," September 10, 2003. The protocols provide that the self-declaration process to be used by facilities sites should be a credible, effective and objective evaluation of the site's EMS. Furthermore, the process should ensure that the system is not only conformant, but also designed for ongoing evaluation and continual improvement. The process should also include the degree of transparency and objectivity necessary to make the self-declaration credible.

The protocols developed by the Working Group directed agencies to develop a procedure that addresses the following areas:

- Direction on the use of an evaluation guide
- Makeup of the independent review team (e.g. headquarters, other facility, other agency or contractor)
- Qualification of independent reviewers
- Documenting and using the results of management system evaluations
- Development of a site self-declaration statement
- Direction on the frequency of the self-declaration internal evaluations
- Frequency of agency independent reviews
- Schedule for reviewing the self-declaration procedures that considers changes in mission and organization (this review should consider changes in agency programs and missions when appropriate, but on a schedule that does not exceed five years)

The procedures set forth below address the areas that should be covered pursuant to the protocols. However, these procedures represent only one example of a site self-declaration procedure. DOE sites may develop other self-declaration procedures so long as the procedures address the areas listed above.

PROCEDURES

1. Use of Evaluation Guide

Attachment 3 contains the EMS elements required by DOE O 450.1 to be integrated into an ISMS. This attachment should be used to develop an evaluation checklist or lines of inquiry that can be used during an evaluation of the site's ISMS/EMS.

2. Makeup of Independent Review Team

After a site has completed its ISMS/EMS, but before conducting an evaluation to determine conformity of the ISMS/EMS, an independent review team (e.g. Headquarters, other facility, other agency) should be established. Issues regarding whether the team should be made up of internal and/or external reviewers, the size of the review team, and the qualification of the team members are key considerations.

To ensure team credibility, the members should be independent, free of bias and conflict, and competent to carry out their responsibilities. Using external reviewers to conduct the evaluation can help ensure independence.

The size of the review team should be appropriate to the complexity of the ISMS/EMS and should include a team leader. The team leader should be designated by the site and facility senior management and have applied experience and training with management systems. The team leader should also have strong project management experience.

3. Qualification of Team Members

It is highly recommended that the team be composed of members who have technical and compliance experience, auditing, and HAZWOPER training (if it is necessary to have physical access to hazardous areas). An administrative professional is a key team member to provide a central point of contact for the evaluation team. Team members should also have appropriate clearances to access all documents and areas, as appropriate.

4. Pre-visit Activities

Once the site/facility senior management identifies the team leader, and the team leader has identified team members, a list of resources and a budget should be developed. The team should consider the following items: laptop computer, digital or video camera, and personal protective equipment, such as safety glasses, safety shoes, respirators, and hard hats.

The team leader should send formal notification to the site/facility senior management indicating the start date of the evaluation and a kickoff meeting with critical site personnel who will be involved in the evaluation. A sample memorandum is shown below. A copy of the appropriate evaluation checklist or lines of inquiry should be shared with the participants at the kickoff meeting so that an opportunity will exist to clarify and answer questions.

Sample Notification Memorandum

DATE:

REPLY TO
ATTN OF:

SUBJECT: ISMS/EMS Self-Declaration Evaluation

TO:

On _____, the ISMS/EMS self-declaration evaluation team will begin a review of your ISMS/EMS. This evaluation will determine whether your site's/facility's EMS/ISMS conforms to DOE O 450.1. Before the team begins its review, we would like to schedule a kickoff meeting with key site personnel who will be involved in the evaluation. If it is convenient, we would like to schedule the kickoff meeting from 8:30 a.m. until noon on _____. Please contact _____ of my team if you have questions. Thank you for your cooperation.

The team leader should assemble the team and begin reviewing documentation, such as the following:

- Past reviews (such as ISMS)
- Assessments
- Audits (preferably from the past 2 years)
- Policy, guidance, and procedure documents
- National Environmental Policy Act of 1969 (NEPA) documentation
- Environmental organization exhibit
- List of key individuals for each evaluated area

The team leader should make arrangements for dedicated office and meeting space for the duration of the evaluation with telephone, fax, printer and copier, and computer capabilities. In addition, the team leader should also make an assignment list with deadlines and distribute the list to all team members.

5. Onsite Evaluation

The team leader should make arrangements to conduct a briefing with managers, team members, and key personnel in the area to be evaluated. This briefing may review the scope of the evaluation, expected products, and outcomes. The schedule and activities, along with any resource needs or issues, should be discussed at this briefing.

a. Daily Evaluation Activities

Evaluation team members should conduct interviews and observe media-specific operations with personnel to assess various program components with respect to the checklist. These personnel may include the following:

- Senior environmental official/manager in the area being evaluated
- Environmental personnel (federal and contractor)
- Managers and operations personnel in areas of environmental significance
- Site/facility environmental manager

Evaluation team members may review relevant documents, as necessary, to assess the ISMS environmental program. The evaluation team should document in notes any findings or observations and send them to a central repository managed by the team's administrative staff.

The team should have a daily end-of-day briefing with the team leader. Managers and other personnel (at the team leader's discretion) may also attend the briefing to discuss findings and observations and the next day's schedule and activities.

6. Documenting and Using the Results of Management Systems Evaluations

The evaluation team should develop steps to document the results of the management system evaluation, including steps for acknowledging adequate management systems, followup

actions to address inadequacies in the site management systems, and reporting results of evaluation for inclusion in the DOE annual ISMS/EMS reviews.

To rate the conformity of the management systems, the following criteria may be used:

C=Conformity

SC=Sufficiently in Conformity (nonconformities are minor)

NC=Nonconformity.

Findings of nonconformity may be classified further in the following categories:

- **Significant**—May result in a direct and immediate threat to human health, safety, the environment, or the site mission—requires immediate attention
- **Regulatory**—Noncompliance with a federal or state regulation or permit
- **Policy**—Noncompliance with DOE directive, or policy

7. Out-Briefing

The team leader should conduct the out-briefing with the assistance of other team members. Attendees should include site senior managers, environmental managers, and contractor managers. A sample agenda is outlined below:

SAMPLE AGENDA

Purpose and Scope of Evaluation

Management Review

- Positive Observations

- Findings

- Performance Indicators

Future Actions

8. Post-Visit Activities

The Evaluation Report may be structured based on the format outlined below. The report should be completed within 4 to 6 weeks after completion of the evaluation. The draft report should be circulated to the team members and senior federal and contractor managers for review and comment. A period of at least 2 weeks should be factored in for resolving any comments. The final report will include an action plan for resolution of any findings, including estimated completion dates and notification of final closure for each finding. After completion and resolution of the findings, site/facility senior management will prepare and submit a self-declaration memorandum to the appropriate CSO no later than December 31, 2005, with a copy to the Office of Environment, Safety and Health. (Section 10.3.1 lists information that should be included in this memorandum.)

Site/facility senior management should publicly issue a self-declaration statement that it has a management system that conforms to DOE Order 450.1. This statement should be communicated on the site's web page. A sample statement is shown below.

Sample Evaluation Report Format

I. Introduction (includes description of facility, evaluation method, overall content of report)

II. Results (overall discussion of results of evaluation)

III. Conclusions (overall discussion of effectiveness of management system)

Appendix A—Acronyms

Appendix B—Team Membership

Appendix C—Findings (detailed discussion of the findings based on criteria)

Appendix D—Action Plan for Resolution of Findings

Sample Self-Declaration Statement

{Insert name of Operations/Field/Site office manager here} declares that {Insert name of site or facility} has an environmental management system that is fully integrated with its integrated safety management system and meets the requirements of DOE Order 450.1, Environmental Protection Program. This integrated management system provides {insert name of site or facility here} with the means to cost effectively meet or exceed compliance with applicable environmental, public health and safety and resource protection laws, regulations, and DOE requirements. In making this declaration, I have relied on the following: {insert a brief description of the findings from the evaluation that supports the declaration}

9. Frequency of Facility Self-Declaration Evaluations

Although the self-declaration evaluation is a one-time occurrence, subsequent evaluations to ensure that the management system continues to conform should be conducted at least every 3 years or sooner if evaluation/audits/self-assessments indicate that the management system is no longer confirming. These subsequent evaluations should be integrated into a site's existing audit/assessment program.

10. Schedule for Reviewing Self-Declaration Procedures

Site self-declaration procedures should be periodically reviewed on a schedule that does not exceed five years. This review should consider changes in DOE programs and mission and revisions to the procedures should be made when appropriate.

ATTACHMENT 3

ELEMENTS OF AN ISMS/EMS-DOE ORDER 450.1

Elements of an ISMS/EMS – DOE Order 450.1

The environmental management system is a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals (DOE O 450.1 §1.).

The environmental management system is part of the Integrated Safety Management System established pursuant to DOE P 450.4 *Safety Management System Policy* (DOE O 450.1 §1.).

Planning

The ISMS/EMS provides for the systematic planning of programs for public health and environmental protection (DOE O 450.1 §4.a.(1)(a)).

The ISMS/EMS provides for the systematic planning of programs for pollution prevention (DOE O 450.1 §4.a.(1)(b)).

Environmental aspects.

The ISMS/EMS includes policies [and] procedures to identify activities with significant environmental impacts (DOE O 450.1 §4.a.(2)).

Legal and other requirements.

The ISMS/EMS provides for the systematic planning of programs for compliance with applicable requirements (DOE O 450.1 §4.a.(1)).

The ISMS/EMS includes (if applicable) conformity of DOE proposed actions with State Implementation Plans to attain and maintain national ambient air quality standards (DOE O 450.1 §4.b.(1)(a)).

The ISMS/EMS includes (if applicable) implementation of a watershed approach for surface water protection (DOE O 450.1 §4.b.(1)(b)).

The ISMS/EMS includes (if applicable) protection of other natural resources, including biota (DOE O 450.1 §4.b.(1)(d)).

The ISMS/EMS includes (if applicable) protection of cultural resources (DOE O 450.1 §4.b.(1)(f)).

The ISMS/EMS includes (if applicable) implementation of a site-wide approach for groundwater protection (DOE O 450.1 §4.b.(1)(c)).

The ISMS/EMS includes (if applicable) protection of site resources from wildland and operational fires (DOE O 450.1 §4.b.(1)(e)).

The ISMS/EMS provides for reduction or elimination of: the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS), through source reduction, re-use, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services (DOE O 450.1 §4.b.(3)).

The ISMS/EMS promotes the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and post-closure life cycle (DOE O 450.1 §4.b.(2)).

Objectives and targets.

The ISMS/EMS includes measurable environmental goals, objectives, and targets (DOE O 450.1 §4.a.(3)).

The ISMS/EMS includes site-specific goals that contribute to the accomplishment of DOE pollution prevention and energy efficiency goals (DOE O 450.1 §5.c.(3)).

Contractor ES&H performance objectives, performance measures, and commitments include appropriate environmental elements based on the environmental risks, impacts of activities at the site and established Departmental pollution prevention/energy efficiency goals (DOE O 450.1 §5.d.(17)).

Environmental management program(s).

The ISMS/EMS includes policies [and] procedures to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts (DOE O 450.1 §4.a.(2)).

The ISMS/EMS includes (if applicable) conformity of DOE proposed actions with State Implementation Plans to attain and maintain national ambient air quality standards (DOE O 450.1 §4.b.(1)(a)).

The ISMS/EMS includes (if applicable) implementation of a watershed approach for surface water protection (DOE O 450.1 §4.b.(1)(b)).

The ISMS/EMS includes (if applicable) implementation of a site-wide approach for ground water protection (DOE O 450.1 §4.b.(1)(c)).

The ISMS/EMS includes (if applicable) protection of other natural resources, including biota (DOE O 450.1 §4.b.(1)(d)).

The ISMS/EMS includes development and implementation of cost-effective pollution prevention programs that use life-cycle assessment concepts and practices in determining program return-on-investment (DOE O 450.1 §5.c.(4)).

The ISMS/EMS includes (if applicable) protection of cultural resources (DOE O 450.1 §4.b.(1)(f)).

The ISMS/EMS includes (if applicable) implementation of a site-wide approach for groundwater protection (DOE O 450.1 §4.b.(1)(c)).

The ISMS/EMS includes (if applicable) protection of site resources from wildland and operational fires (DOE O 450.1 §4.b.(1)(e)).

The ISMS/EMS provides for reduction or elimination of: the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS), through source reduction, re-use, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services (DOE O 450.1 §4.b.(3)).

The ISMS/EMS promotes the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and post-closure life cycle (DOE O 450.1 §4.b.(2)).

Implementation and operation

The ISMS/EMS provides for the integrated execution of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements (DOE O 450.1 §4.a.(1)).

Structure and responsibility.

[Structure and responsibility is addressed in Policy 450.4 *Safety Management System Policy*, DOE Policy 411.1 *Safety Management Functions Responsibilities and Authorities Policy*, DOE Manual 411.1B *Safety Management Functions, Responsibilities and Authorities*, and other DOE policies, procedures and requirements.]

Training, awareness, and competence.

The ISMS/EMS includes training to identify activities with significant environmental impacts (DOE O 450.1 §4.a.(2)).

The ISMS/EMS includes training to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts (DOE O 450.1 §4.a.(2)).

The ISMS/EMS includes training to assess performance and implement corrective actions where needed (DOE O 450.1 §4.a.(2)).

Communication.

The ISMS/EMS provides for obtaining, as appropriate, community advice relevant to aspects of “Greening the Government” Executive Orders, through new or existing outreach programs (DOE O 450.1 §5.d.(3)).

Environmental management system documentation.

Approved ISMS descriptions have been updated, as necessary, to include EMS requirements (DOE O 450.1 §5.d.(2)).

Document control.

[Document control is addressed in other DOE policies, procedures and requirements.]

Operational control.

The ISMS/EMS includes procedures to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts (DOE O 450.1 §4.a.(2)).

Emergency preparedness and response.

[Emergency preparedness and response is addressed in other DOE policies, procedures and requirements.]

Checking and corrective action

The ISMS/EMS provides for the evaluation of programs for compliance with applicable requirements (DOE O 450.1 §4.a.(1)(c)).

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection (DOE O 450.1 §4.a.(1)(a)).

The ISMS/EMS provides for the evaluation of programs for pollution prevention (DOE O 450.1 §4.a.(1)(b)).

ISMS/EMS implementation is assessed as a component of the implementation of DOE P 450.5 Line Environment, Safety and Health Oversight (DOE O 450.1 §5.b.).

Monitoring and measurement.

The ISMS/EMS includes policies, procedures to assess performance (DOE O 450.1 §4.a.(2)).

Contractor ES&H self-assessment programs within the framework of DOE P 450.5 are established and continue to be effective (DOE O 450.1 §5.d.(16)).

The ISMS/EMS ensures the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including, as appropriate, preoperational characterization and assessment and effluent and surveillance monitoring (DOE O 450.1 §4.b.(4)).

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to support the site's ISMS, to detect, characterize, and respond to releases from DOE activities (DOE O 450.1 §5.d.(14)).

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to assess impacts (DOE O 450.1 §5.d.(14)).

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to estimate dispersal patterns in the environment (DOE O 450.1 §5.d.(14)).

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to characterize the pathways of exposure to members of the public; and to characterize the exposures and doses to individuals, and to the population (DOE O 450.1 §5.d.(14)).

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to evaluate the potential impacts to the biota in the vicinity of the DOE activity (DOE O 450.1 §5.d.(14)).

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using a consistent system for collecting, assessing, and documenting environmental data of known and documented quality (DOE O 450.1 §5.d.(15)(a)).

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work (DOE O 450.1 §5.d.(15)(b)).

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using an integrated sampling approach to avoid duplicative data collection (DOE O 450.1 §5.d.(15)(c)).

Non conformance and corrective and preventive action.

The ISMS/EMS includes policies, procedures to implement corrective actions where needed (DOE O 450.1 §4.a.(2)).

Records.

[This is addressed in other DOE policies, procedures and requirements.]

Environmental management system audit.

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements (DOE O 450.1 §4.a.(1)).

Contractor ES&H self-assessment programs within the framework of DOE P 450.5 are established and continue to be effective (DOE O 450.1 §5.d.(16)(c)).

Management review

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements (DOE O 450.1 §4.a.(1)).

The ISMS/EMS includes policies, procedures to assess performance (DOE O 450.1 §4.a.(2)).

The ISMS/EMS reviews annually, and updates (when appropriate) the site's measurable environmental goals, objectives, and targets (DOE O 450.1 §4.a.(3)).

ISMS/EMS implementation is assessed as a component of the implementation of DOE P 450.5 Line Environment, Safety and Health Oversight (DOE O 450.1 §5.b.).

Contractor ES&H performance objectives, performance measures, and commitments are reviewed through the annual ISM review process [established pursuant to DEAR 970.5223-1 (e)] (DOE O 450.1 §5.d.(17)).

ATTACHMENT 4

GLOSSARY

ATTACHMENT 4

GLOSSARY

Activities, Products, and Services—A catchall phrase that was developed by Technical Committee 207 of ISO to capture all of the elements at a facility or organization that can interact with the environment.

Assessment—An analysis, appraisal, or evaluation of a DOE program or contractors performance to ensure conformance to regulatory and DOE internal requirements and confirm safe and environmentally protective performance of work.

Audit—A systematic and documented verification process of objectively obtaining and evaluating evidence to determine the adequacy of a program or system within an organization.

Cognizant Secretarial Officer (CSO)—A DOE official at the Assistant Secretary level who is responsible for the assignment of work, the institutional overview of any type of facility, or both, and the management oversight of a laboratory.

Compliance Audit—A systematic and documented verification process of objectively obtaining and evaluating evidence to determine the status of a DOE program regarding compliance with laws, regulations, and DOE Orders.

Composite Impacts—The sum of real or potential significant impacts to human health and the environment that may result from DOE site operations or activities.

Continuous Improvement—The process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organizations environmental policy. This process need not take place in all areas of activity simultaneously.

Corrective Action—An action taken to eliminate the causes of an existing noncompliance, nonconformity, defect, or other undesirable situation in order to prevent recurrence.

Council on Environmental Quality (CEQ)—A council that coordinates federal environmental efforts and works closely with agencies and other White House offices in developing environmental policies and initiatives.

Cultural Resources—Historic properties as defined in the National Historic Preservation Act, archaeological resource as defined in the Archaeological Resources Protection Act, and cultural items as defined in the Native American Graves Protection and Repatriation Act. Includes artifacts and sites dating to the prehistoric, historic, and ethnohistoric periods that are currently located on the ground or buried beneath it; standing structures that are more than 50 years of age or are important because they represent a major historical theme or era; cultural and natural paces, select natural resources, and sacred objects that have importance for Native Americans and other ethnic groups; and American folklife traditions and arts.

EMS Audit—A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization's environmental management system

conforms to the environmental management system audit criteria set by the organization, and for communication of the results of this process to management.

EMS Self-Assessment—An EMS assessment by appropriate DOE elements based on the Code of Environmental Management Principles for Federal Agencies developed by the EPA and/or other appropriate environmental management system framework. This assessment shall include a review of Department environmental leadership goals, objectives, and targets.

Environment—Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation. (ISO-14001, 1996).

Environmental Aspect—Elements of an organization’s activities, products, or services that can interact with the environment. (ISO-14001, 1996) (The environmental aspect of an activity is that part of it that creates a possibility for an environmental impact. As such, it is equivalent to the concept of “hazard” in safety, which is also defined as the mere possibility of a negative event.)

Environmental Impact—A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s activities, products, or services. (ISO-14001, 1996).

Environmental Management System (EMS)—The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, integrating, achieving, reviewing, and maintaining environmental policy; a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals.

Environmental Objective—An overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable. (ISO-14001, 1996).

Environmental Performance—Measurable results of the environmental management system, related to an organization’s control of its environmental aspects, based on its environmental policy, objectives, and targets. (ISO-14001, 1996).

Environmental Policy—A statement by the organization of its intentions and principles in relation to its overall environmental performance, which provides a framework for action and for the setting of its environmental objectives and targets. (ISO-14001, 1996).

Environmental Target—A detailed performance requirement, quantified where practicable, and applicable to the organization or parts thereof, which arises from the environmental objectives and needs to be set and met to achieve those objectives. (ISO-14001, 1996).

Gap Analysis—An assessment of EMS requirements against existing management system descriptions, policies and procedures.

Green Acquisition Advocate—An official appointed by the head of the contracting activity and serves as the procurement expert and team member for Greening the Government initiatives within each contracting activity. (M p. 17, Greening the Department of Energy, E.O. 13101)

Integrated Safety Management System (ISMS)—A DOE management system that provides a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work efficiently and in a manner that ensures protection of workers, the public, and the environment. This management system shall be used to systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment.

ISO-14001 Standard—Internationally recognized voluntary environmental management system standard that provides organizations with the elements of an effective environmental management system that can be integrated with other management requirements to help organizations to achieve environmental and economic goals.

Likelihood—A measure of how often an aspect can be expected to occur within an activity given the probability of its occurrence for each repetition of the activity and the frequency of the activity over time.

Operational Controls—Procedures that help a site in implementing its environmental policy, objectives, and targets.

Organization—A company, corporation, firm, enterprise, authority, or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration. (ISO-14001, 1996).

Pollution Prevention—A source reduction as defined in the Pollution Prevention Act, and other practices that reduce or eliminate the creation of pollutants through 1) increased efficiency in the use of raw materials, energy, water, or other natural resources; or 2) protection of natural resources by conservation. The DOE has expanded this definition to include recycling.

Potential Environmental Impact—An aspect defined by its likelihood of occurrence and likely consequences. It is equivalent to the concept of “risk” in Safety, which assigns a probability and consequence to the possible negative event that may result from a “hazard.”

Recycling—1) The use or reuse of a material as an effective substitute for a commercial product and as an ingredient or feedstock in an industrial or energy-producing process, and 2) the reclamation of useful constituents within a waste, or removal of contaminants from a waste to allow it to be reused.

Root Cause—The origin of an environmental deficiency.

Self-Assessment—An analysis or evaluation of a DOE program or contractors management system by that program or contractor to ensure conformance to regulatory and DOE internal requirements and to confirm the safe and environmentally protective performance of work.

Self-Declaration—An organization determines that it is in full conformance with the requirements of a recognized standard and publicly asserts that it conforms to the specifications of the standard.

Significant Environmental Aspect—An environmental aspect that has or could have a significant impact on the environment, the organization, or to the organization's mission. (ISO-14001, 1996).

Third-Party Registration—The process by which an organization applies for placement on a publicly available list of entities that conforms to a specified set of requirements.

Top Management—The level of management that has executive jurisdiction over the EMS, including the full authority to allocate appropriate resources for its execution.

ATTACHMENT 5

References

ATTACHMENT 5

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